

## EXHIBIT 223

## Supply Chain Integrity

University of Tennessee Supply Chain Forum


November 6<sup>th</sup>, 2008

Mark Hartman—Senior Vice President of Supply Chain  
Integrity and Regulatory Operations at Cardinal Health





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**Cardinal Health**



- Leading provider of products, services and technologies for the healthcare industry
- Headquarters in Dublin, Ohio
- No. 19 on Fortune 500
- 43,500 employees in more than 25 countries
- Business operations on five continents



**Cardinal Health is a global company dedicated to making healthcare safer and more productive**

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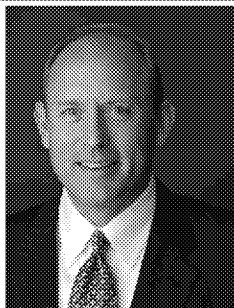
Headquartered in Dublin, Ohio, Cardinal Health is an \$87 billion, global company. We serve the health-care industry by providing products and services that help hospitals, physician offices and pharmacies reduce costs; improve safety, productivity and profitability; and deliver better care to patients.

We develop market-leading technologies to help make supply chains more efficient, reduce hospital-acquired infections and break the cycle of harmful medication errors. We also manufacture medical and surgical products and are one of the largest distributors of pharmaceuticals and medical supplies worldwide.

Currently, Cardinal Health is ranked No. 19 on the Fortune 500.

SEGUE: Let's take a look at my role within Cardinal

## Mark Hartman



Senior Vice President

Supply Chain Integrity and Regulatory Operations

Joined Cardinal Health in 1998

Bachelor of Science degree in Engineering from the  
United States Military Academy

- Oversight to Cardinal Health's pharmaceutical anti-diversion controls and pedigree efforts
- Responsible for establishment and deployment of a robust Quality System which ensures regulatory compliance
- Regulatory oversight for Cardinal Health's 27 pharmaceutical and 50 medical distribution centers nationally



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## Supply Chain Integrity

**Supply Chain Integrity is a holistic approach to the supply chain ecosystem of an industry aimed at creating a safe and secure supply chain from manufacturer to end user**

- Cardinal began work in Supply Chain Integrity as a response to leaks within the pharmaceutical value chain
- Supply Chain Integrity is a new approach aimed at tightening the supply chain ecosystem with the goal of all participants working interconnected to prevent and respond to issues
- The principles of Supply Chain Integrity can be applied to any industry to create more a efficient value chain through collaborative efforts



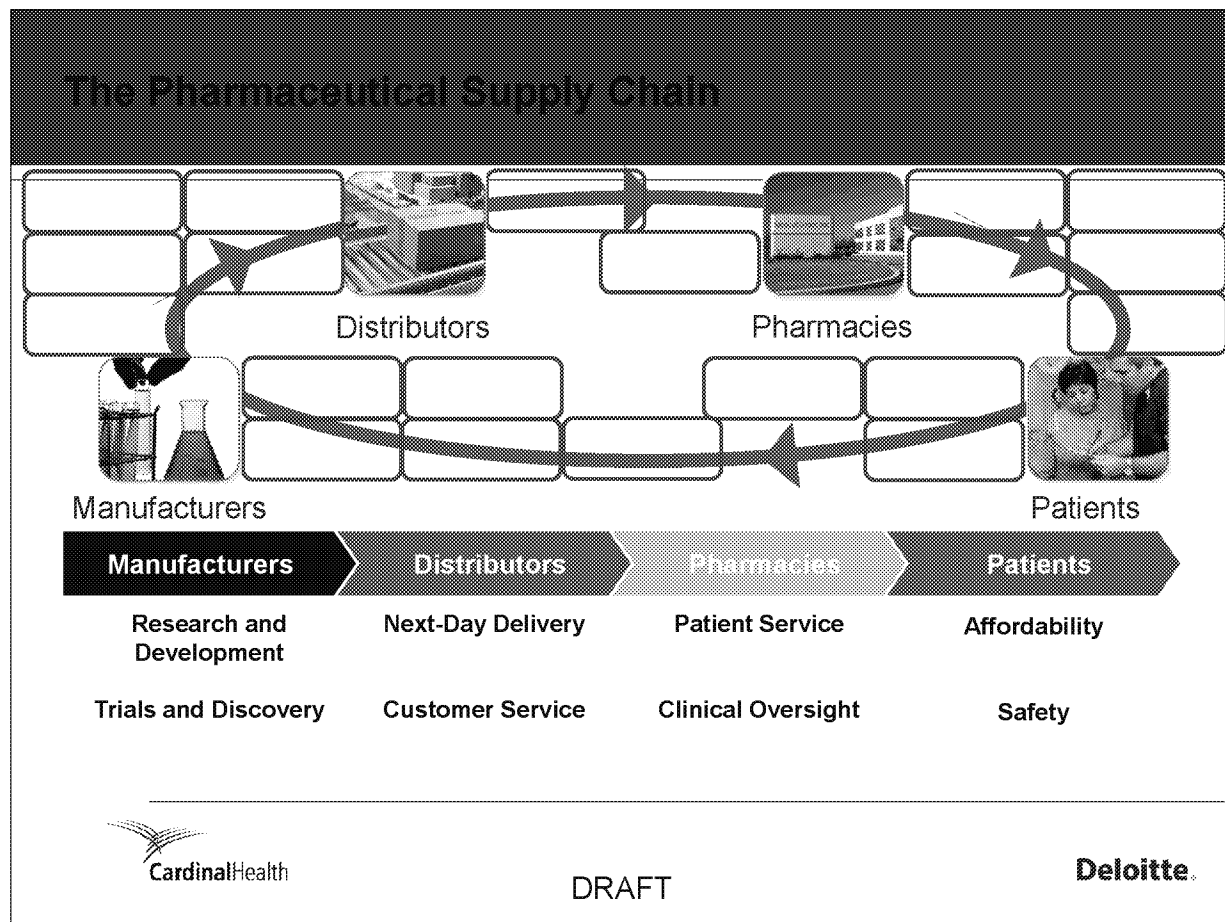
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I don't know about you but this stuff scares me! I have seven kids ranging from 28-13. I'm living this issue of prescription drug abuse at work and the fear of it at home.

And our kids are obviously finding ways to get the drugs. And in many cases it's coming from illegitimate means.



So let's talk about The Pharmaceutical Supply Chain. I think we have a proud tradition of developing and continuously improving a secure supply chain. The pharmaceutical distribution model has made an incredibly efficient on stop shop model

Manufacturers: produce, ship orders to distributors

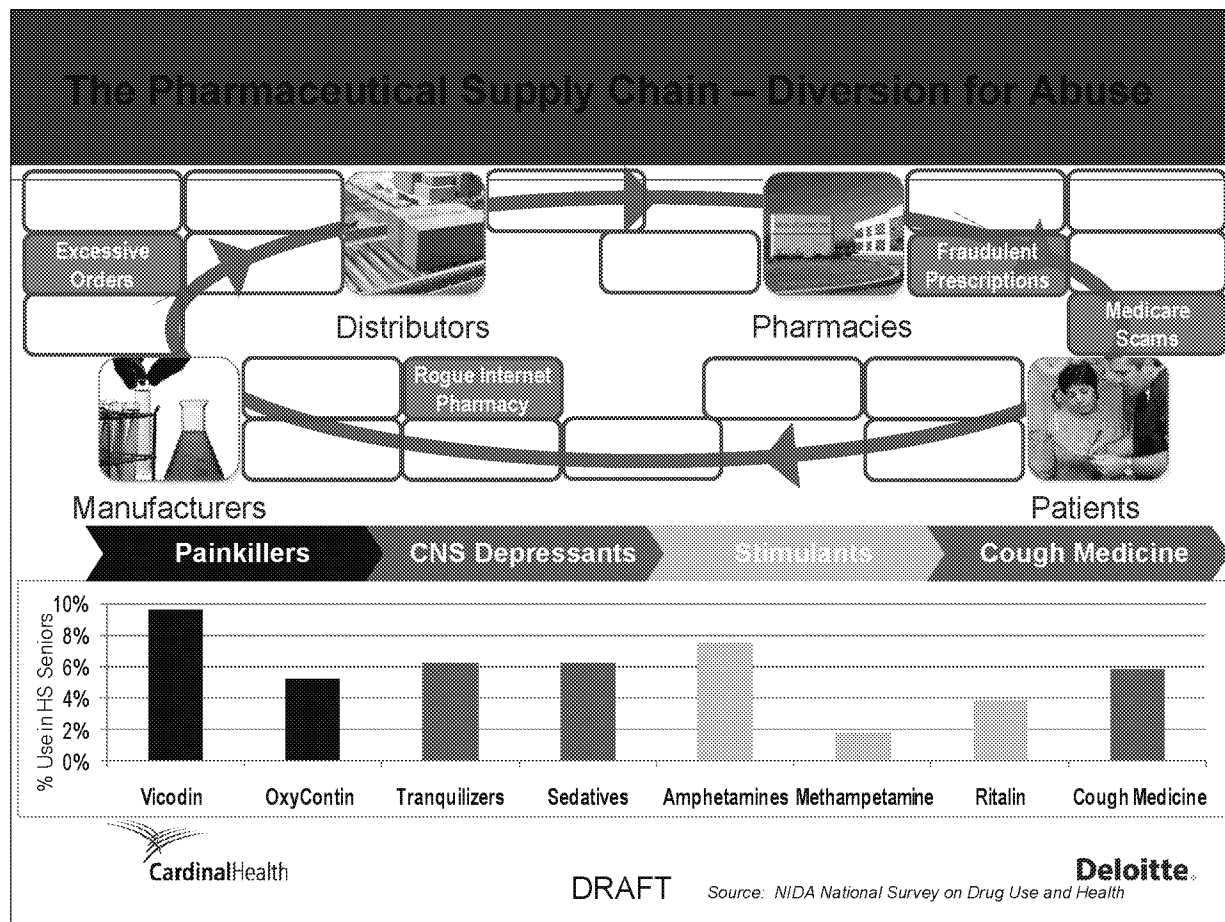
Distributors: organize and consolidate orders and deliver to the pharmacies next day

The distributors consolidate thousands of manufacturer products through efficient ordering systems which are pulled, packed and shipped for next morning deliveries

Pharmacy: next day dispense to patients

Patient: Take prescribed medication

This is a strong reliable system that has come under attack through Diversion, Tampering, Counterfeit, Price Diversion and not to mention traditional issues we've been working on like expiration and prescription errors. The regulatory scrutiny has had to increase and demand improved security ... making SCI a critical requirement for us all and Cardinal Health has made this a number one priority. Additionally, next day delivery allows no room for error in our process.



So let's start with the issue of diversion. We have populated a couple of the boxes on our grid to represent the tremendous problem of rogue internet drug sales representing diversion for abuse so our beautiful supply chain flow shows an obstacle.

Drugs our kids are abusing:

Vikes (Nearly 10%) of all high school seniors abuse this drug

40-bars (Oxycontin)

"Robotripping"

Skittles – Coricidin

There is a website dedicated to the use of "Skittles" that will calculate by body weight the number of pills one must ingest to reach different levels of abuse

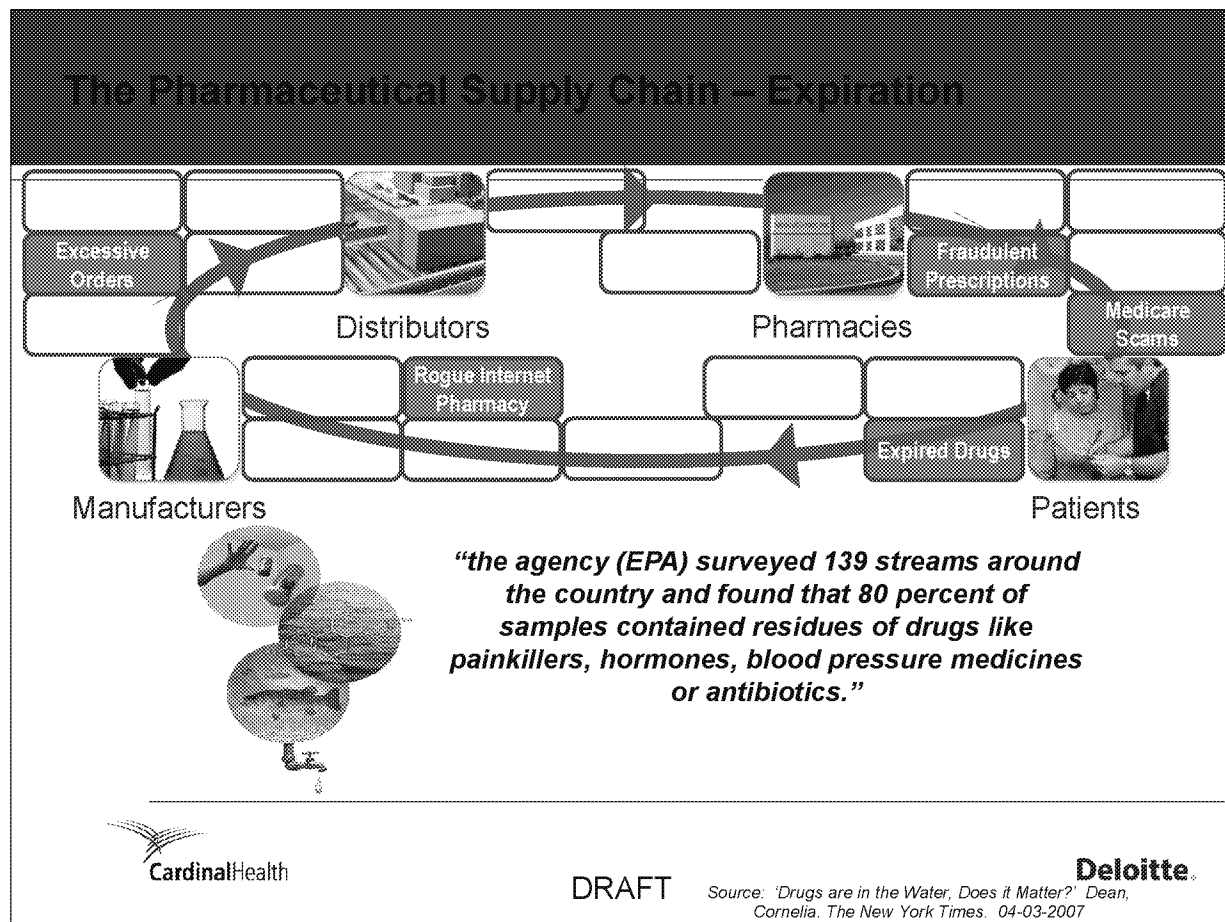
The DEA estimates that nearly 7 million Americans currently abuse prescription drugs, up 80% from 2000.

10% of high school seniors admit to abusing pain killers

Every day, 2,500 youths (12-17) abuse a prescription pain reliever for the first time

As substance abuse as a whole is on the decline, the abuse of prescription drugs is on the rise





Improper disposal of prescriptions leads to these substances showing up in our water system.

We are yet to understand the impact, but these substances have a much larger impact on smaller wildlife in our waterways.

And, these new studies gaining media attention are a call to action.

How do consumers properly dispose of drugs not taken? Many of those drugs also end up in our kids' hands as well, which brings us back to prescription drug abuse.

Currently, our industry has no solution for disposing of drugs

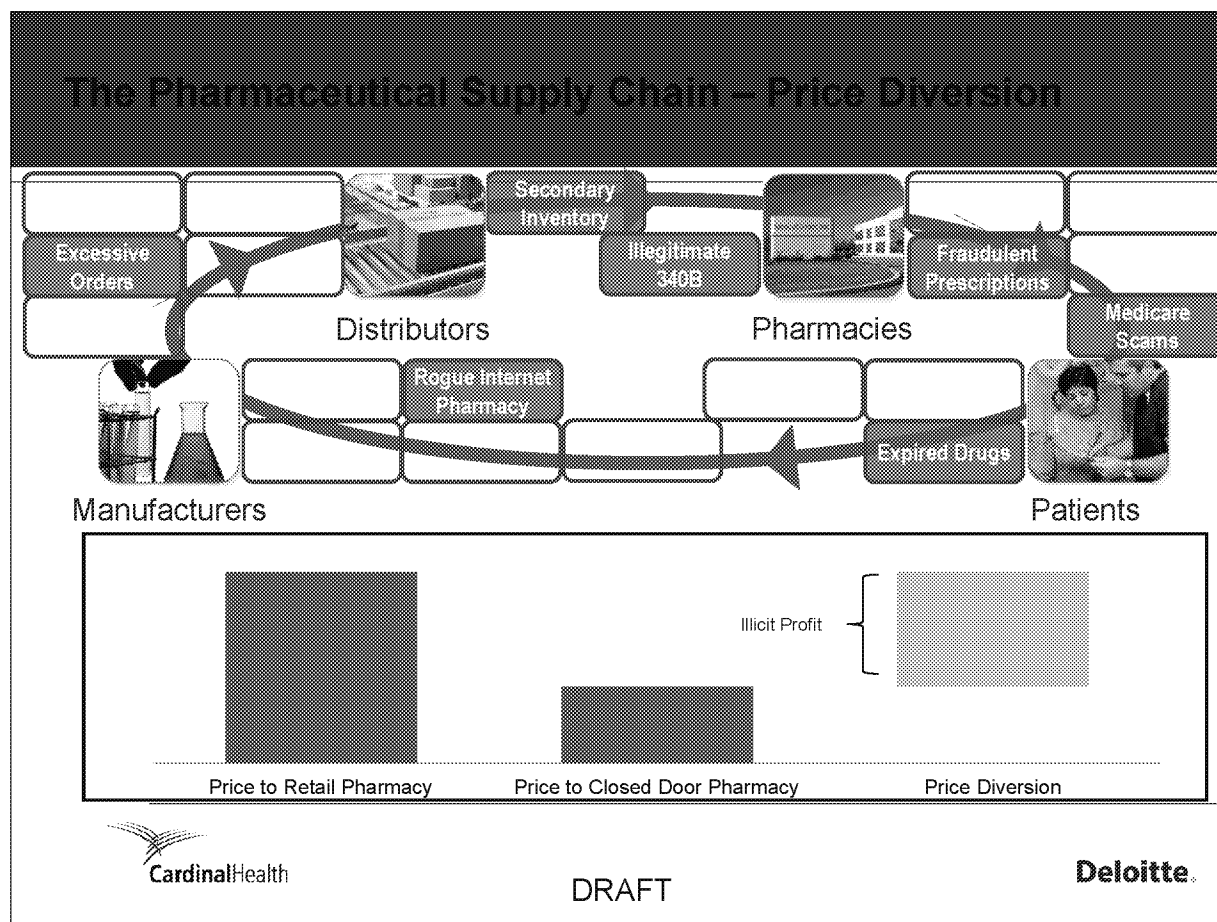
Legislation is currently being drafted by the EPA to add pharmaceuticals to the Universal Waste Rule

Aimed to simplify requirements; this law will provide regulatory relief to facilities dealing with pharmaceutical that may be considered hazardous if they entered our water systems

Once a patient has completed treatment, what do they do with excess medication?

The FDA currently recommends flushing harmful drugs such as Oxycontin, Reyataz, and Percocets. We need a better system than just flushing these drugs into our waterways.

The Supply Chain Integrity ecosystem encompasses reverse logistics and action by the supply chain is needed.

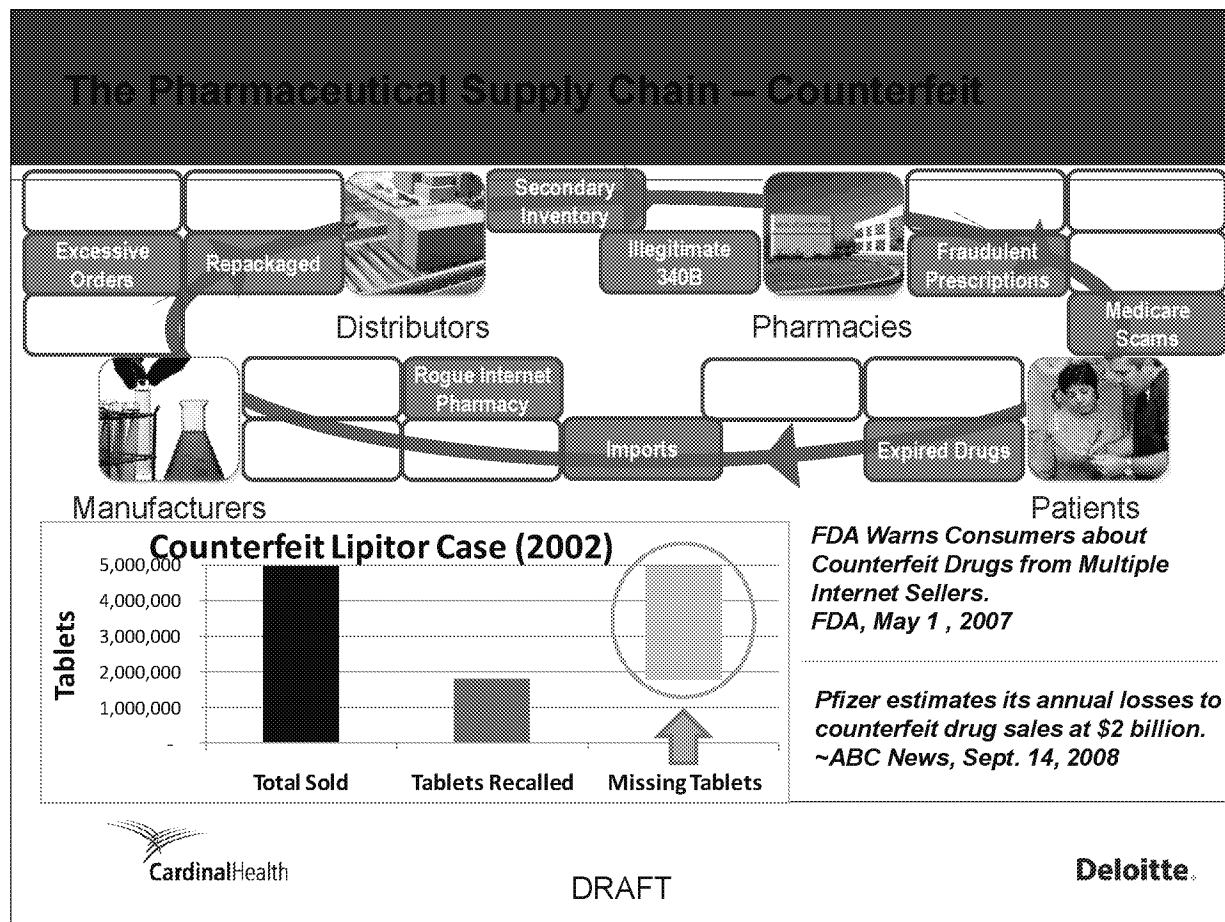


Prior to March 2005, Cardinal made sales of pharmaceuticals to a Nevada company which purported to be a “closed-door” pharmacy that served only nursing homes. In a routine pattern, the Nevada company placed two orders at the same time. One was for products likely to be needed by its stated patient population of nursing home residents, typically in quantities of ones or twos, as would be expected for its needs. The other was for much higher quantities and included products unlikely to be needed by the nursing home residents. Despite this pattern, Cardinal continued to fill the company’s dual orders as described above. Investigation has shown that the company dispensed the products on the small-quantity orders to nursing home residents, and it transferred the products on the large-quantity orders to an affiliated wholesaler for resale on the Secondary Market. In March 2005, Cardinal discontinued doing business with this purported closed-door pharmacy

Secondary Markets

Price Diversion

The green box represents the incentive to price divert (shown as illicit profit)



Counterfeit drugs has become a leading problem in the pharmaceutical supply chain. A couple ways we've noted is through repackaged drugs or imports.

The profits are huge for the bad guys if they can get this into the supply chain through counterfeit.

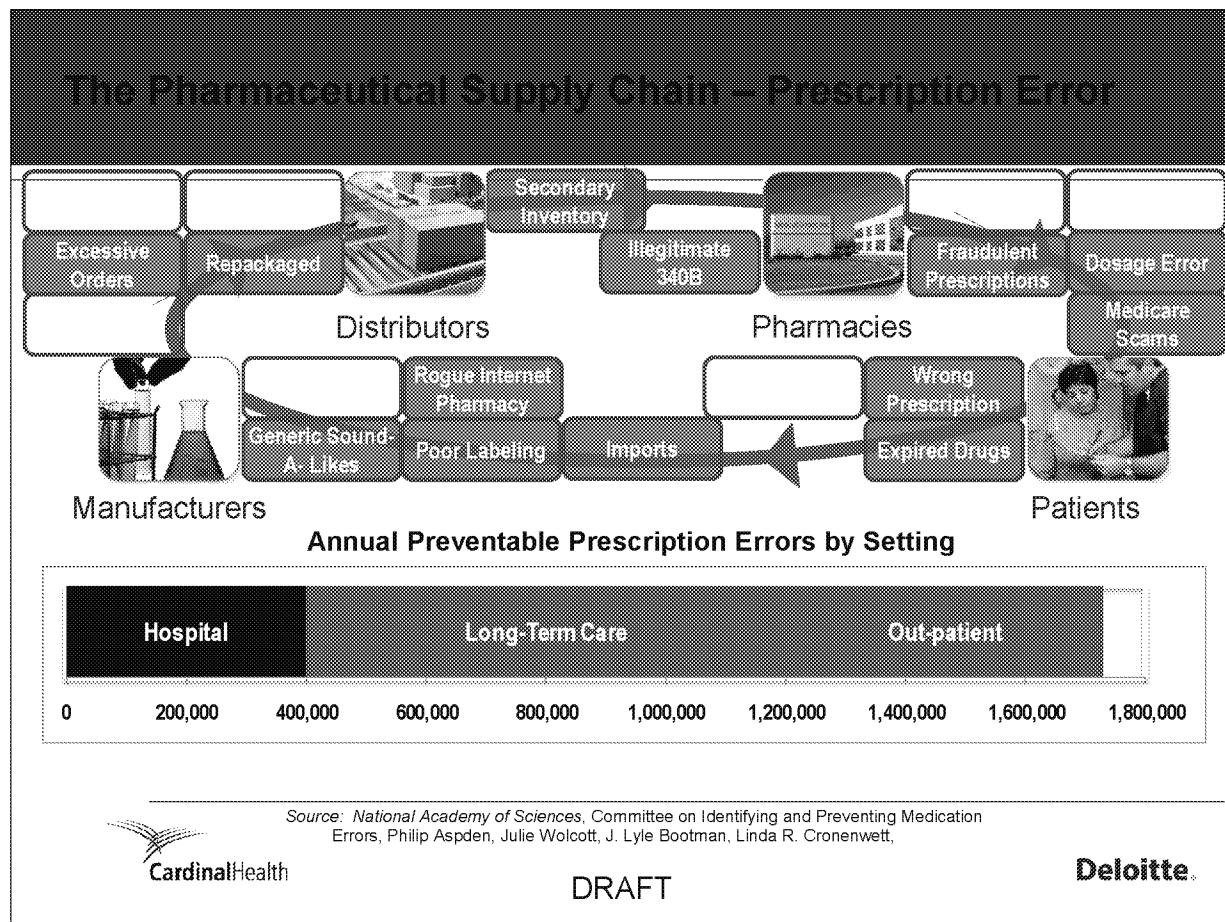
According to the Washington Post, over 4 million counterfeit Lipitor tablets were sold from a Miami based warehouse. Only 1,800,000 of which were recalled.

Counterfeit prescription drugs have a larger societal impact outside the U.S. due to lax regulation

The World Health Organization estimates that the annual amount of counterfeit drug sales are between \$35 - \$40 billion per year.

The World Health Organization estimates that one in three drugs on the worldwide market today is counterfeit.

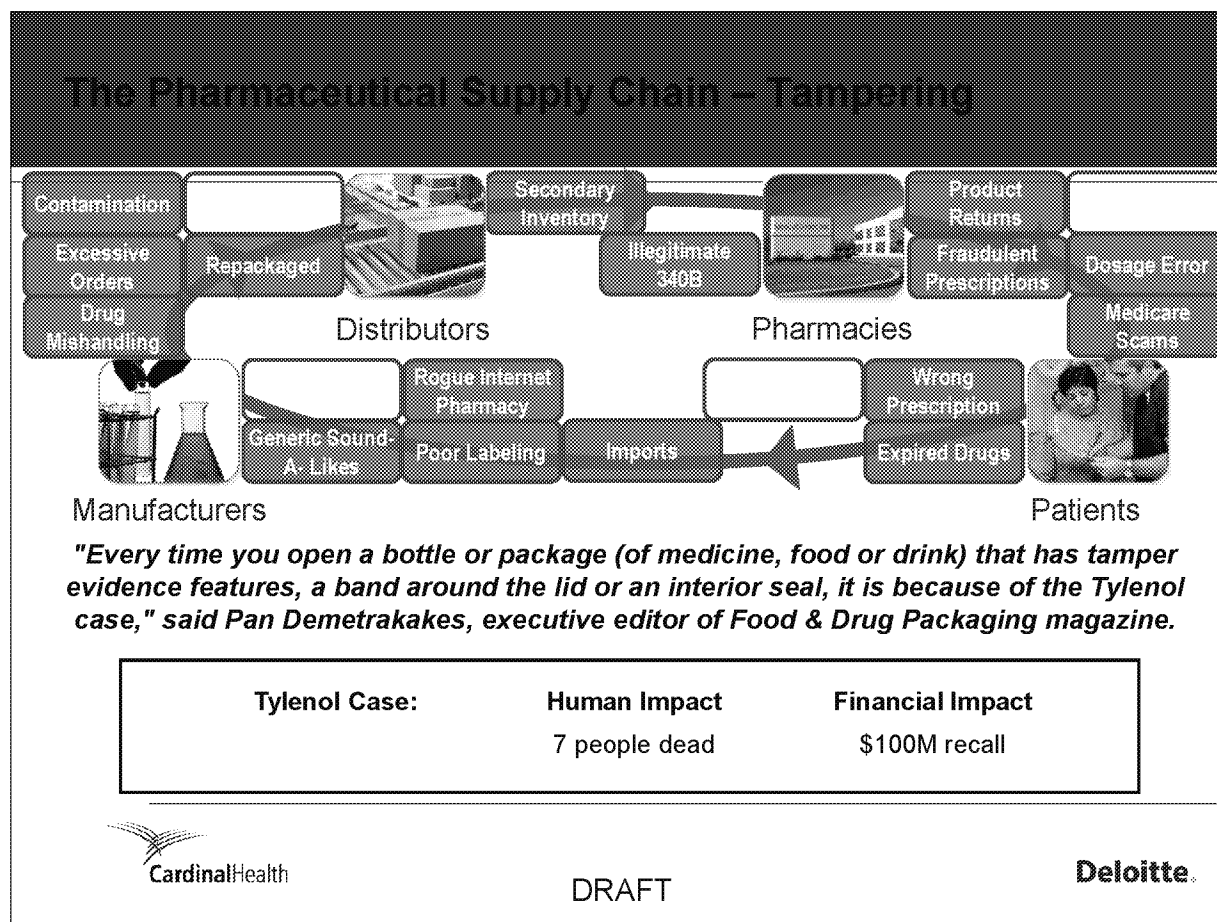
This issue is Huge and has driven the current pedigree requirements and desire for further pedigree legislation calling for electronic track and trace capabilities in the future.



The Institute of Medicine have said that 50,000 -100,000 people die from preventable medical errors a year, and prescription as the most common error

- Brand -Generic "look alike" names
- Different doses of the same brand
- Cluttered labeling - small fonts
- Inadequate warnings and reminders
- Lack of standardized terminology

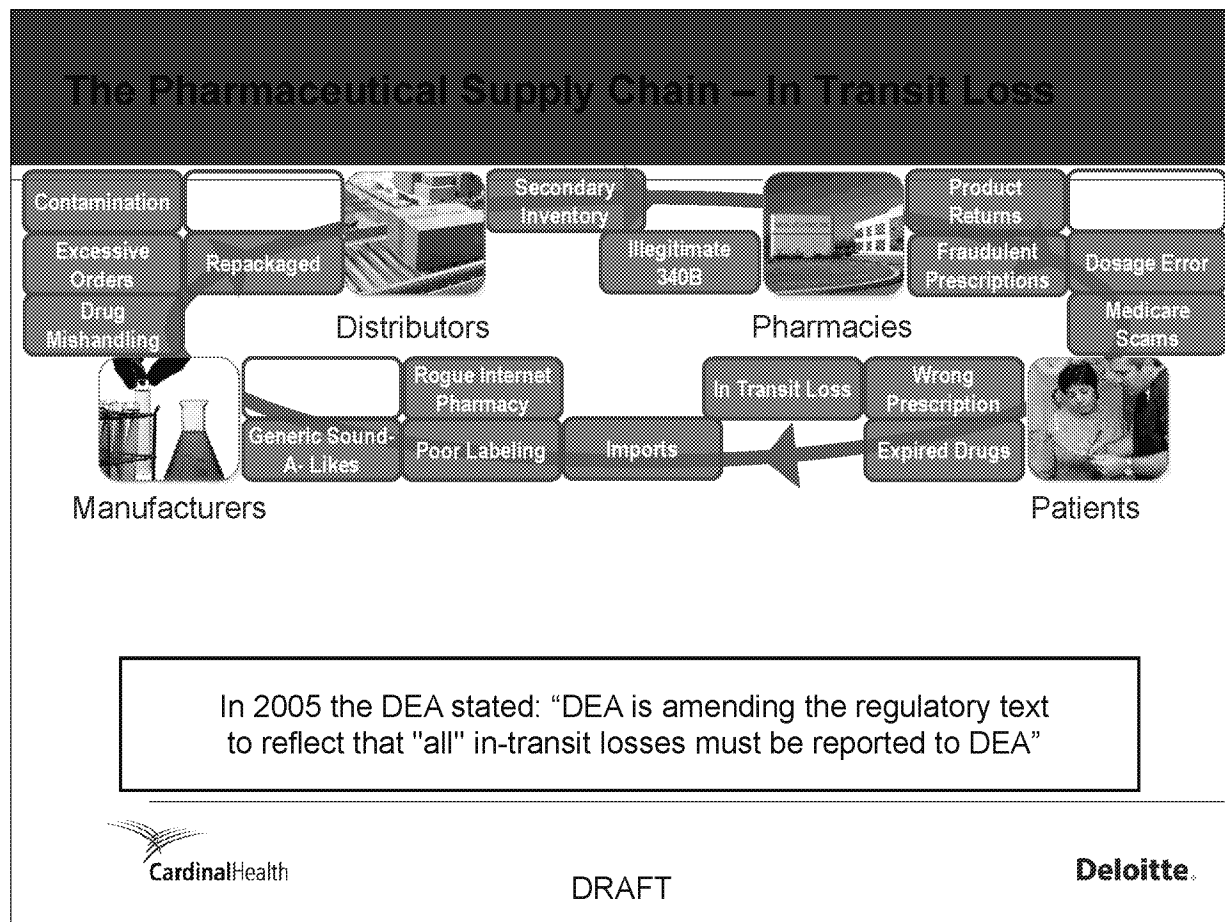
The issue will take the entire health care ecosystem to collaboratively work together to work towards minimizing these errors in the future.



The issue of tampering, whether for economic gain or malicious intent, results in further obstacles in our supply chain grid.

We are all familiar with the Tylenol case from 1982. The outcomes of that sad situation were to improve our packaging, strengthen the supply chain and provide security.

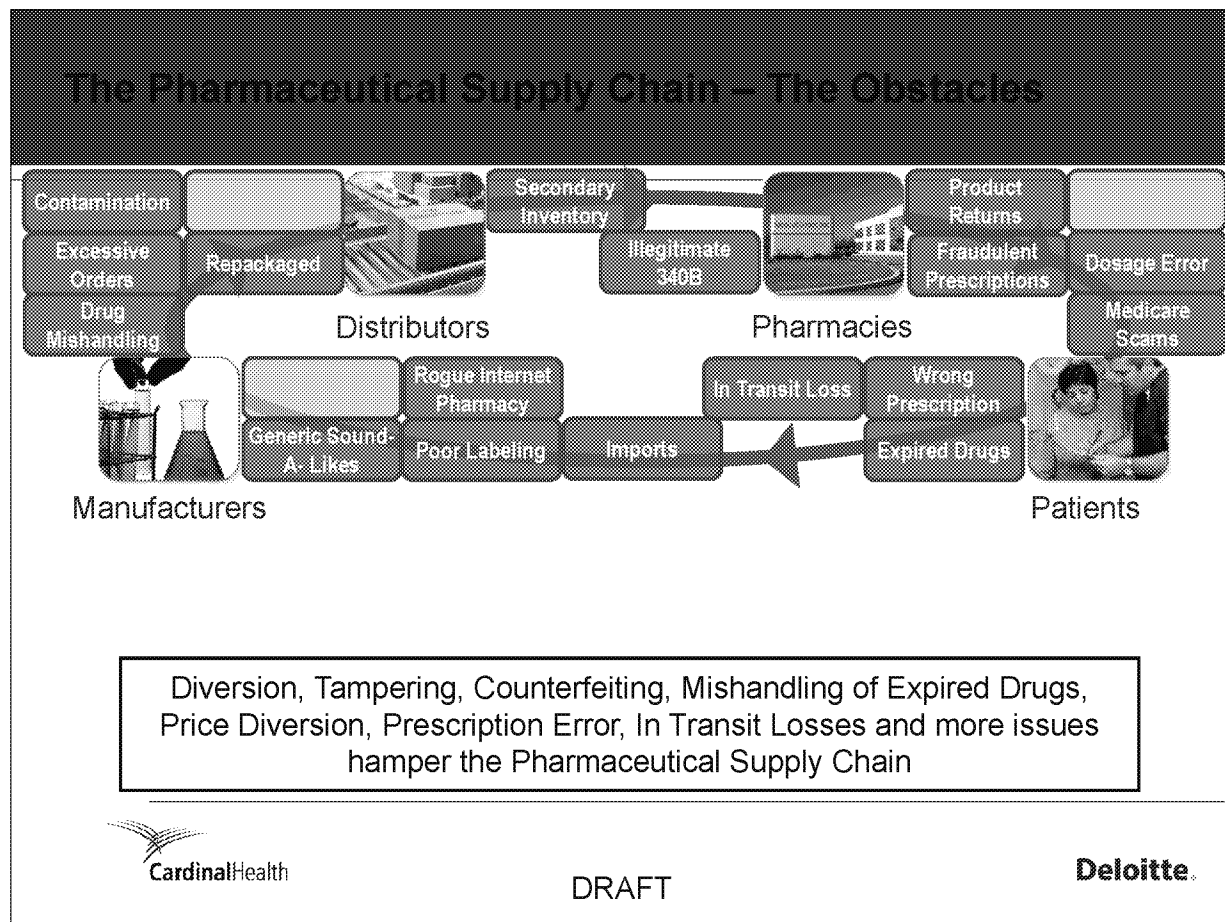
A more recent tampering incident was recently discovered. Robert Courtney, a pharmacist in Kansas City, confessed to diluting thousands of prescriptions over a nine year period. Motivated by greed, he primarily diluted chemotherapy medication robbing patients of their chance to beat cancer, while amassing a small fortune.



In transit losses are becoming more common due to the value of prescription meds on the street. A single Oxycotin pill goes for \$80.

So as the distributors have tightened up the ability of rogue internet pharmacies to get the drugs, the bad guys will go to where they can get them robbing pharmacies and last mile carriers.



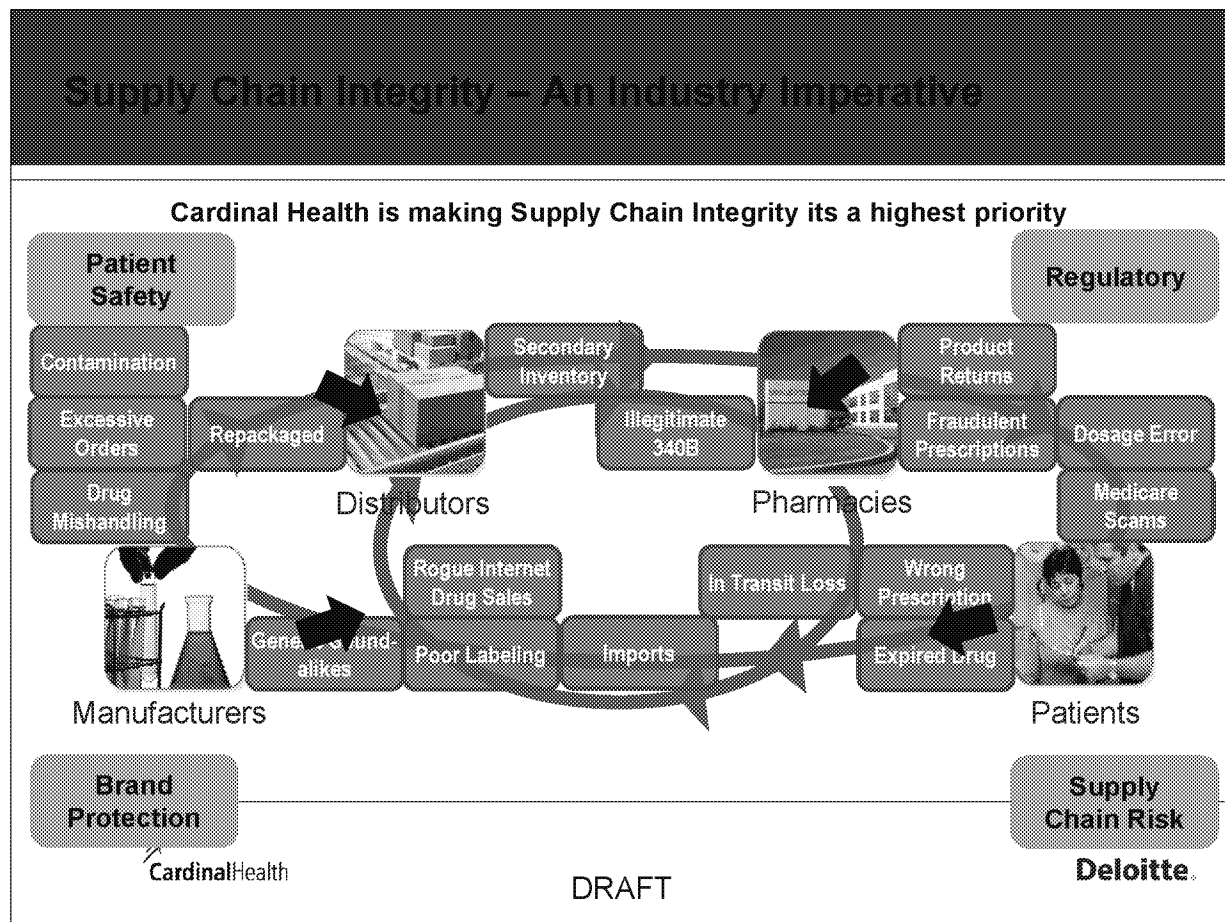


Our industry is currently facing a plethora of issues that we must deal with proactively.

We cannot stand by idly while these obstacles ultimately take away from our industries ultimate goal of patient safety.

As we begin to tighten our supply chain and make it more difficult to divert our products, we will have to seek out and deal with accordingly new issues.

We will have to continuously improve our supply chain to make the distribution of pharmaceuticals the most secure it can be



These drivers represent why we must work closer together to achieve Supply Chain Integrity

Patient Safety must be the paramount goal of our industry

This means getting the correct drugs in the correct amounts to the correct people while keeping unintended use to a minimum

Especially in Life Sciences and Health Care, “supply chain integrity” is an important driver as we think about our operations and supply chain

Supply Chain Integrity can only be reached if we as an industry work closely together to eliminate the obstacles we face. Cardinal needs to be a leader as well as all other members of the supply chain.

We need to be the Supply Chain Integrity entity that our partners can depend on and be an active part of. . .

Supply Chain Integrity can be accomplished by always keeping in mind important drivers to creating a secure supply chain (Segue)



## Supply Chain Integrity – Brand Protection

### Pharmacies and Drugs Affected by Drug Diversion Operation

- April 28, 2005 the United States Attorney for the District of Utah announced a series of indictments concerning illegal drug diversion
- The FDA published a list of *potentially* affected drugs and pharmacies on their website
- 19 manufacturers listed
- 42 different drugs listed
- 85 pharmacies listed



<http://www.fda.gov/bbs/topics/answers/2005/ANS01353lists.html>

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Manufacturer	Drug
Abbot Labs	Kaletra
Astra Zeneca	Seroquel
Boehringer Ingelheim	Viramune
Bristol Meyer Squibb	Avalide
Eli Lilly & Co.	Zyprexa
Gilead Sciences	Emtriva
Glaxo Smith Kline	Combivir
Janssen Pharmaceutica	Risperdal
Merck	Proscar
Merck & Co.	Crixivan
Novartis Pharmaceutical	Diovan
Ortho Biotech	Procrit
Ortho-McNeil	Levaquin
Pfizer Inc.	Celebrex
Roche Pharmaceuticals	Coreg
Sanofi Avenis	Lovenox
Serono	Serostim
Smith Kline Beecham	Epzicom
Wyeth-Ayerst Laboratories	Protonix

On April 28, 2005 the United States Attorney for the District of Utah announced a series of indictments concerning an illegal drug diversion operation occurring in several states throughout the country. Although the operation appears to be limited in scope, FDA is providing as much information as possible to the public about the distribution of these illegal drugs to help patients and health providers determine if they might have been affected.

## Supply Chain Integrity – Regulatory Compliance

The 'cost' of noncompliance reaches more than just financial statements



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Regulatory Compliance is a required for any supply chain. In pharmaceuticals, these are some of the regulatory agencies commonly dealt with. And when action is taken, the stories, of course, often make headline news. Obviously they have tremendous oversight of the supply chain and noncompliance can lead to significant costs and disruptions in order to get into compliance

## Supply Chain Integrity – Risk

**Supply Chain issues cost the industry billions in 2008**



*Subpoenas Seek Data on Resales of Drugs*



*\$894 million deal ends pain of Pfizer's lawsuits*



*Cardinal Health to Pay Penalty Over Diversion of Painkiller*



*Pfizer to Pay \$430 Million Over Promoting Drug to Doctors*



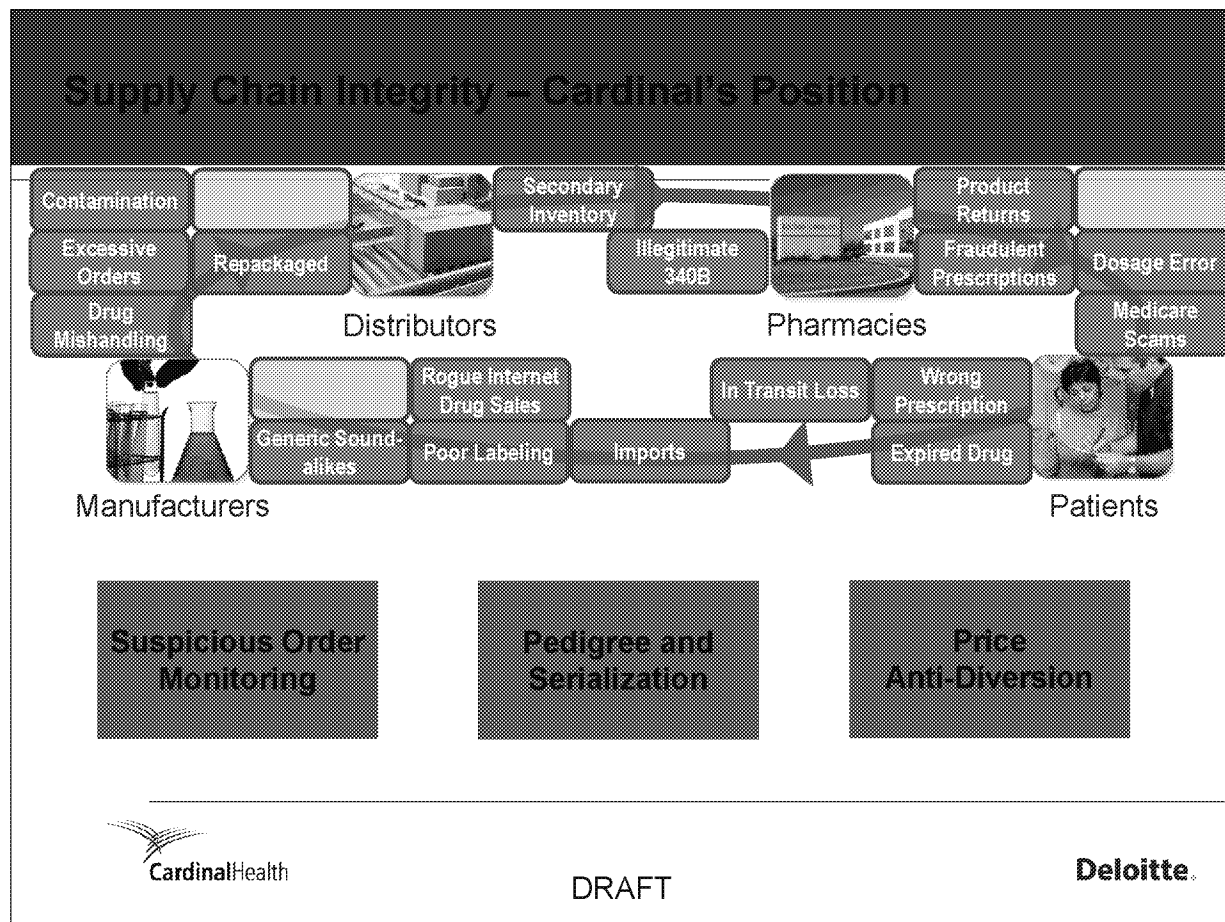
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These are some of the headlines over the recent years where the costs can be extremely high when compliance issues are found. Regulatory compliance training and adherence are critical to companies in the pharmaceutical supply chain.



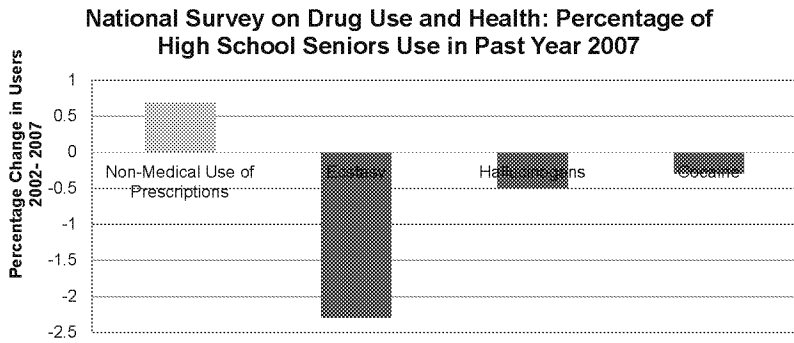
Highlighting Cardinal's leadership in Supply Chain Integrity

As an organization, these are the current issues Cardinal is solving to create a better supply chain

ePedigree and Serialization  
 New York Attorney General  
 Suspicious Order Monitoring

## Supply Chain Integrity – Suspicious Order Monitoring

“An analysis of autopsies in 2007 released this week by the Florida Medical Examiners Commission found that the rate of **deaths caused by prescription drugs** was **three times the rate of deaths caused by all illicit drugs combined.**”



- **Section 1301.74 Code of Federal Regulations**
- **2005 to 2006 – the DEA began a series of informal discussions with the pharmaceutical supply chain**
- **Actions Cardinal is Taking**



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Source: 'Legal Drugs Kill far More Than Illegal, Florida Says' Damien Cave. New York Times. June 14, 2008

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The abuse of prescription drugs killed three times the amount of people that illicit drugs killed in the state of Florida last year

This graph shows that while most illicit drug use is on a decline, the abuse of prescription drugs is increasing. This is based on survey of 12th graders taken every year

### Registrant obligations

#### Section 1301.74 Code of Federal Regulations

Before distributing the registrant must make a good faith effort by contacting

DEA or state agency to determine that the customer is registered to possess controlled substances

The registrant must design and operate a system to disclose to the registrant suspicious orders of controlled substances.

The registrant shall inform the Field Division Office of the Administration in his area of suspicious orders when discovered by the registrant.

Suspicious orders include orders of unusual size,

orders deviating substantially from a normal pattern,

and orders of unusual frequency

“Design and operate a system to disclose to the registrant suspicious orders of controlled substances.”

The regulation clearly indicates that it is the sole responsibility of the registrant to design and operate such a system.

The system must meet the criteria to identify, block and report suspicious orders.

The registrant must work with and collaborate with customers to meet this obligation.

Everyone will have one, it is a registrant responsibility.

2005 to 2006—the DEA began a series of informal discussions with the supply chain.

Message: anti-diversion is everyone's responsibility

Uptake of the message was not as rapid and robust as the Administration wanted

2006 to 2008—the DEA began a series of regulatory actions to promote change.

Supply chain response has been a dramatic improvement in systems to identify, block and report suspicious orders of controlled substances.

Diversion is serious and affects everyone in the pharmaceutical industry.

For Cardinal specifically—

DEA licenses were suspended at three Cardinal Health facilities. We self-imposed a restriction at a fourth facility relating to retail independent sales.

We are having regular communication with DEA. Both Cardinal Health and DEA need complete confidence the right controls are in place across the network before suspensions will be lifted.

Introduced Suspicious Order Monitoring program for retail independent customers with expansion to all classes of trade.

## Supply Chain Integrity – Suspicious Order Monitoring

### A Suspicious Order Monitoring program must include two threads

- Know Your Customer
- Electronic Monitoring
  - Historical Analysis
  - Threshold Setting



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### Know Your Customer

As you can see by these pictures knowing your customers is an invaluable part of SCI. We try to visit all of our customers in order to avoid situations like the one in the picture to the left

### Questionnaire Key Information

Ownership

Application to Board of Pharmacy

History of purchases and/or dispensing

12 month history

Series of objective evidence questions/characteristics

Compliance Representations & Warranties

### Electronic Monitoring

A tool/system to enable in evaluation

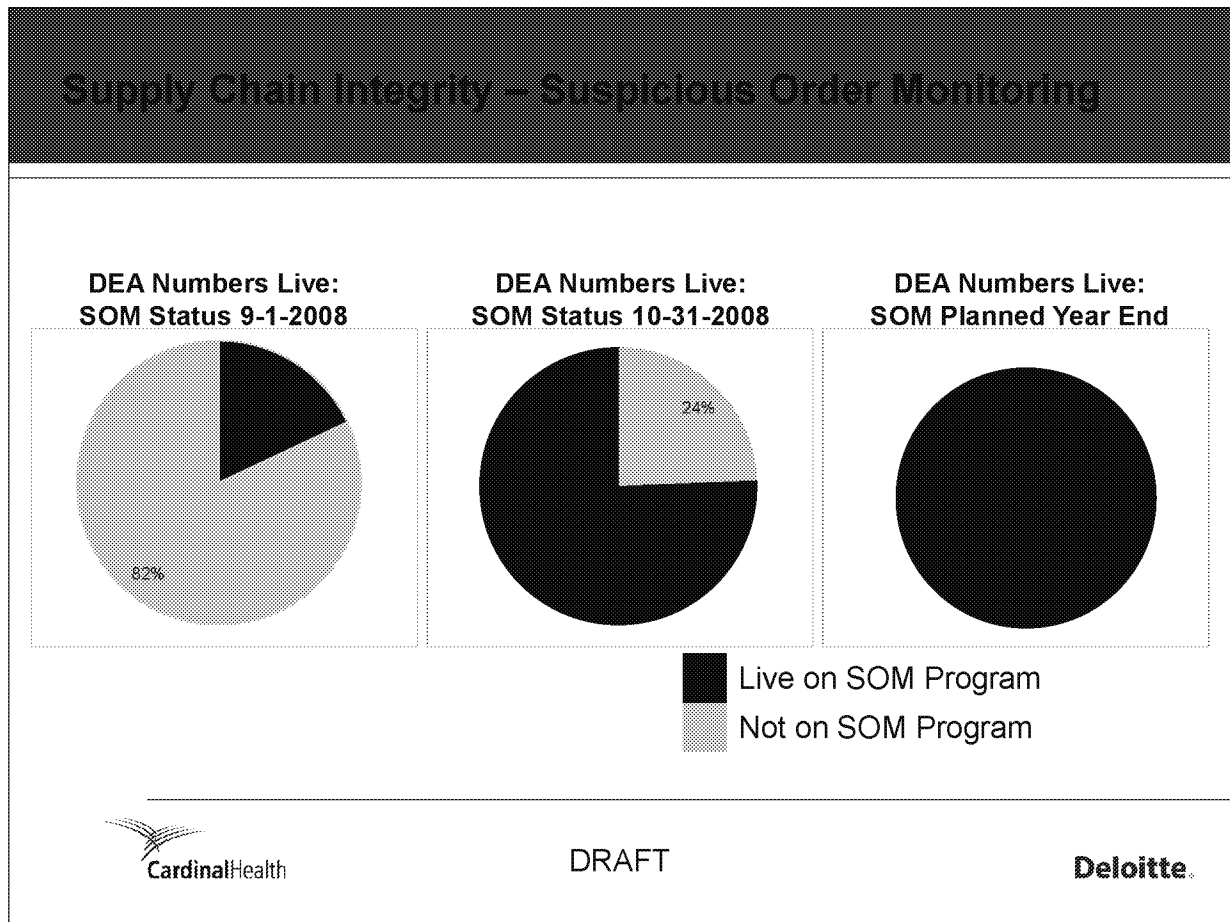
Statistical formula(s) used to establish pharmacy thresholds

Data mining for patterns and practices

Continuous revision of parameters for each customer

Increase, decrease, or maintain thresholds

Pharmacist conducts review and analysis



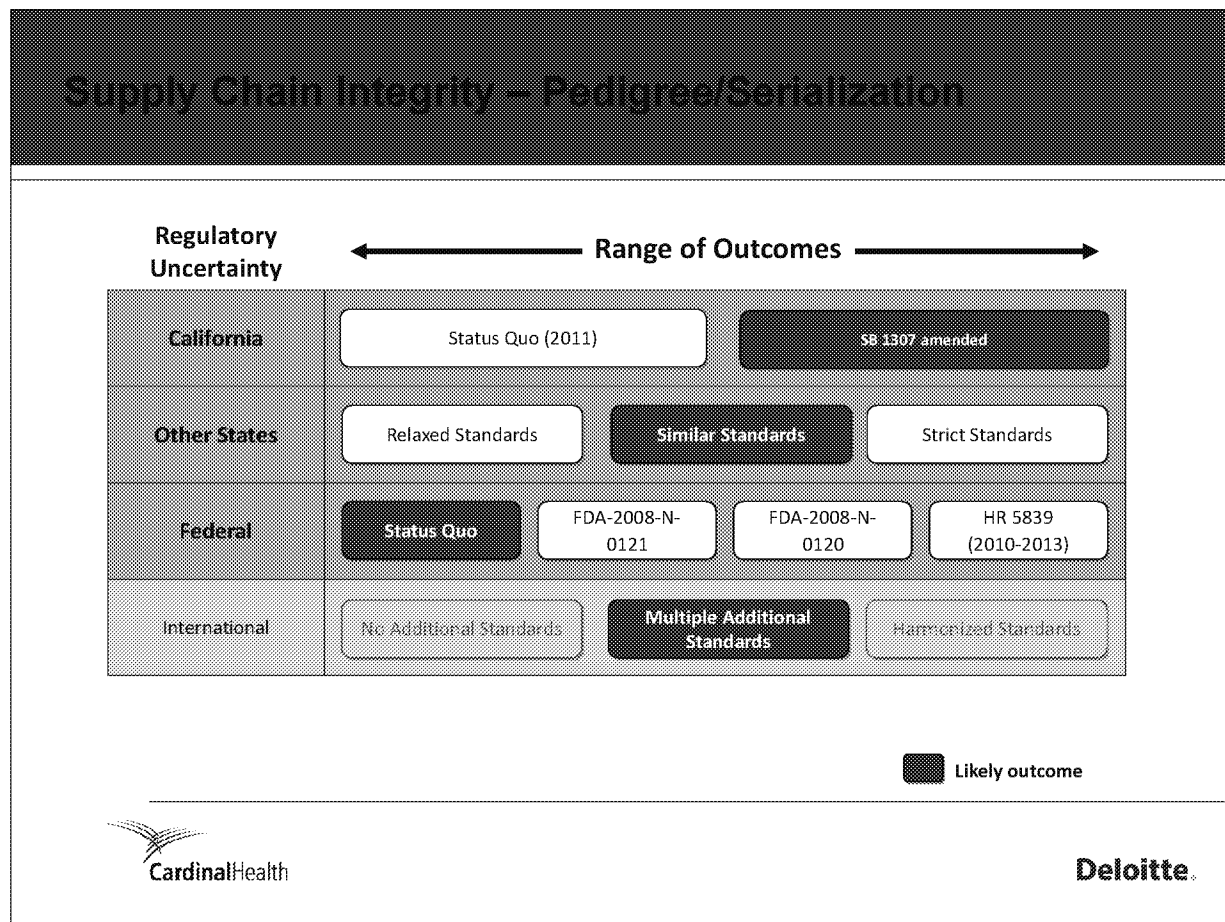
Success stories around the Electronic Monitoring system

Large Chain asking to be put under the SOM system

Catching order entry errors and the communication between the organizations to resolve the issue

Cardinal has also reported suspicious orders to the proper authority



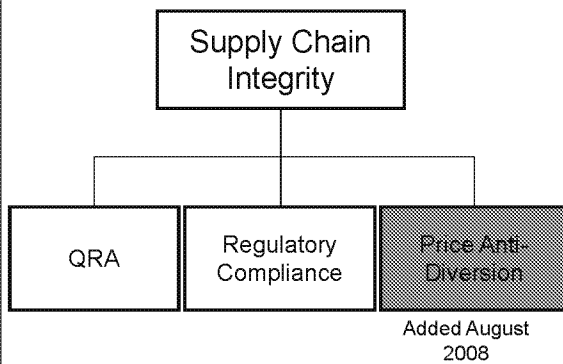


There are a number of ePedigree outcomes that could develop over the next year at the state and federal level. This uncertainty has created confusion and slowed, although not stopped, ePedigree implementation across the supply chain. While regulations may change, a serialization capability should continue to be developed. Serialization is the foundation for Good Manufacturing Processes (GMP) practices that will allow Cardinal to compete, grow market share and enhance services.

Cardinal has no serialization capabilities to create, manage or leverage information from serialized products, or capture the benefits that serialization will provide, due to current infrastructure constraints.

A crisp tactical, multi-year plan has not emerged to guide Cardinal through the uncertainty and risk environment. A strategy that allows Cardinal to reduce risk, maintain competitive parity, and progress towards compliance in a pragmatic manner is required. Serialization will be a key component of that strategy.

## Supply Chain Integrity – Price Diversion



- Price Diversion—moving a product from its intended market channel to one not authorized by the manufacturer

- e.g. pharmacy buys branded product under discounted contract price, then resells on secondary market

- Negative impacts of price diversion

- Lower revenue from higher paid discounts
  - Risk of liability
  - Inflated inventory due to artificially high demand

An effective system for identifying Price Diversion events will leverage analysis and IT solutions developed for Suspicious Order Monitoring

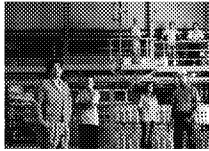
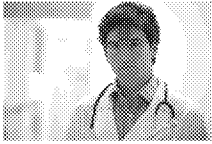


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Source: A. Miano, "Price Diversion: Challenge for Supply Chain Pros", *Supply Chain Management Review*, Nov 1 2004.

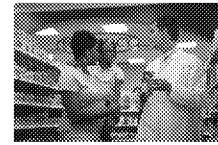
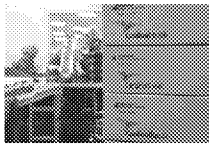
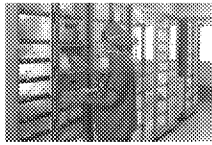
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## Collective Action – A Call to Action



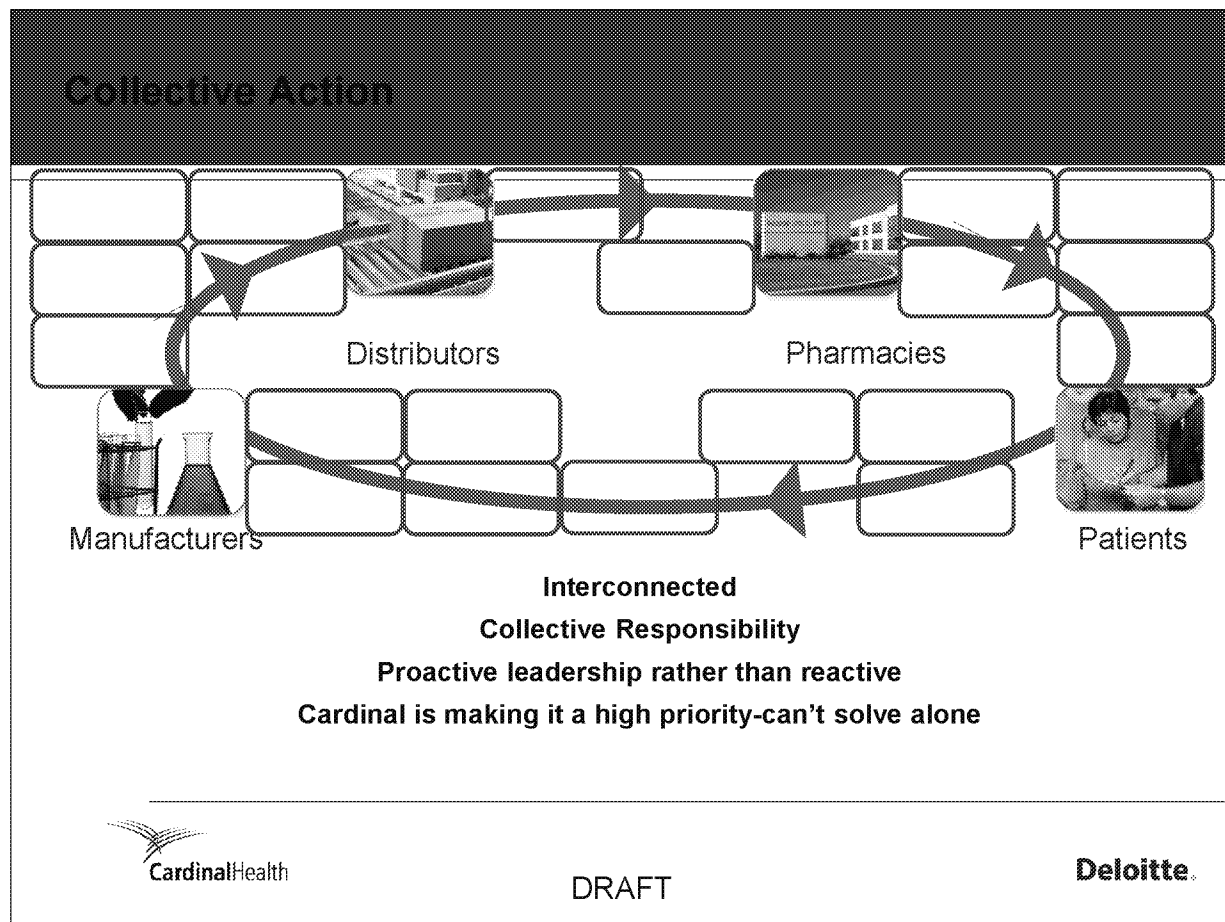
**“The drug dealer is us.”**

John Watson, National Drug Czar, Feb. 07



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Prescription drug diversion is a societal problem to be addressed by a societal solution involving all participants in the prescription drug supply chain: from manufacturer to patient with the collaboration and cooperation of regulatory bodies on the state and federal levels.

We can only achieve Supply Chain integrity by working closely together and collaboratively taking actions against issue that may arise.

Everyone in our industry is ultimately responsible for the safety of our patients. I bet all of us are patients at sometime in our lives, so in reality we are all responsible for keeping not only ourselves safe, but our children, our family and our friends safe as well. There must exist and implicit public trust in our industry and we must strive to continually build on that trust.

Sitting and waiting for issues to arise can no longer be the industry standard. Proactively seeking out issues that may arise will allow us to save lives.,

This is a collective effort, however Cardinal is stepping up to be an industry leader.

## Appropriate Response

### Crisis

- 7 murdered in the autumn of 1982 as a result of Tylenol capsules laced with poison
- 2,979 killed in connection with September 11, 2001
- 2,328 deaths associated with pharmaceutical painkillers in 2007 in just the state of Florida

### Response

- Major reforms in the packaging and federal anti-tampering laws
- The United States of America creates the Office of Homeland Security
- 



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**Questions?**



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